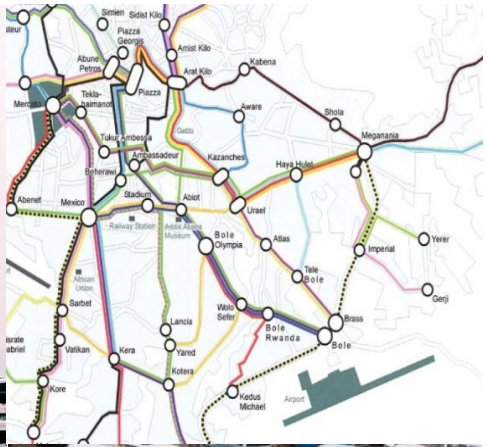
RE-THINKINING TRANSPORT INFRASTRUCTURE INVESTMENTS:

THE CASE OF ADDIS ABABA, ETHIOPIA



Introduction

Across Sub-Saharan Africa, foreign investments in transport networks, telecommunication and energy production have made significant contributions to national development. Some critics however, have labelled the booming interest and involvement in infrastructure development in Sub-Saharan Africa as a form of neo-colonialism; where large-scale infrastructure investments are being made exchange for access to valuable natural resources and land. Casual observation of public perceptions also indicates that these investments are often short-term and provide limited human development (E.g. education, training, long-term employment).

According to African Development Bank estimates (2010), "cities will be home to 65 percent of the continent's population by 2060, up from 40 percent in 2010, putting pressure on transport networks that are already under huge strain" (Obiero 2013). The movement of most goods and people in many of these African cities is currently carried out through an eclectic range of motorized and non-motorized transport modes including walking, animal haulage and other formalized modes. The overwhelming majority of public transport throughout many sub-Saharan African cities however is the informal 'minibus'. And even while these modes of transport continue to be the lifeblood of many African cities, transporting men, women, children, and the elderly at affordable prices, " the taxi network is of course not without its failings, particularly in regards to passenger safety, environmental sustainability, and meeting commuter demand in off-peak periods" (Young 2013).

It is now becoming clearer than ever that organized citywide mass transit systems will be required, if rapidly growing African cities are to cope with the influx of inhabitants and consequent gridlock. Cities including "Nairobi, Kampala and Luanda are among the capitals where light rail systems, bus rapid transit, trams or water taxis in the planning. But, as their policy-makers have found, there is no easy solution for affordable, efficient public transport" (ibid). As such, this paper aims to ask why newly introduced transport projects which promise to curb the enormous demand on the public transport system often fail to address issues of social exclusion, inequality, deployment and maintenance. In this analysis, I will explore what governance and business models, social networks and stakeholder behaviors can contribute to the creation of long-term employment, private sector support and community participation in the maintenance and overall resilience of current and future infrastructure projects.

While many African countries, are trying to work towards middle income statuses, their transport planning policies and investments often have limited focus on addressing issues of social exclusion. To illustrate the potential to address some of these issues, this paper will reflect on a light rail infrastructure project currently under way at a rapid pace in Addis Ababa, Ethiopia. This project is the first of its kind in Ethiopia and could potentially serve as an example of high quality pro-poor public transport in the global south. This case was also chosen to illustrate the current move towards planning organized mass transit systems in many cities on the continent.

While this paper focuses on a single transport infrastructure project in Addis Ababa, Ethiopia, the implications of such projects could be applied to other cities on the continent where similar spatial transformations are occurring. By examining the potential effects that the Addis Ababa Light Rail

Transit (AALRT) may have on the diverse range of citizens in Addis Ababa, one might be able to find that some sections of the population will have adequate access to the newly built transit service while others will continue to remain on the margins.

This paper will also examine these socio-spatial effects of the AALRT project by expanding on several existing theoretical concepts in the field, primarily the 'right to the city'; an approach to urban planning with strong links to the paradigms of accessibility, social urbanism and social exclusion. Through a contextualized understanding of these concepts, one may be able to see how city authorities can "move away from the traditional systems-based approach to transport provision, towards a more people-focused and needs-based social policy perspective" (Lucas 2010, p. 4).

Through a theoretical lens of the 'right to the city', the paper will investigate how the Addis Ababa City Administration (AACA) can ensure that social inclusion and equity are at the centre of their transport planning policies and interventions. Extensive desk research will shed light on how social inclusion and equity can be mainstreamed in transport planning and infrastructure provision through "increasing public participation to sustain political commitment for refining governance models, and facilitating sustainable transportation investments to promote sustained economic growth" (Chen et al. 2013) As such this research will aim to ask the following questions:

- *Why are the socio-economic impacts of transport infrastructure projects in the Global South often overlooked in light of increased technical innovation and progress?*
- *How can transport infrastructure projects in the Global South follow a planning paradigm that identifies and prioritises the needs of the most underprivileged users?*
- *What role can stakeholders and policymakers in the public transport sector play to promote more inclusive and accessible public transport systems in cities of the Global South?*

A Hybrid Approach: Bridging the Right to the City with Accessibility, Social Inclusion and Social Urbanism

Projects like the AALRT and other major projects around the city are currently bringing about significant changes in the city's expansion and sprawl pattern as well. In rapidly formalizing cities like Addis Ababa, "new transport infrastructure generally energises real estate markets and stimulates new activities and patterns of land use." (Brand and Davila 2013, p. 46). These changes primarily benefit those citizens living in the formal city, where planning procedures are often most pertinent. This leaves out a large section of the population that often has difficulty accessing these real estate markets and other opportunities. It is therefore imperative that planning procedures and interventions take place to ensure the participation of and benefit to the city's most marginalized populations.

With a clearer understanding of accessibility, social inclusion and social urbanism, it is now possible to frame the right to the city in the context of the Addis Ababa case. Transport infrastructure projects like the AALRT can potentially benefit from adopting a right to the city approach in their operations

and maintenance plans. By exploring ways in which they can bring about improved accessibility and develop related projects targeting the city's poorest inhabitants, the Ethiopian Railway Corporation (ERC) and AACA could be in a position to have increased ridership and community support from local populations.

There is potential here for the AALRT project to be the centre for a series of urban projects that involve "educational and cultural facilities, environmental upgrading and new public spaces"(Brand and Davila 2013, p. 50). Such 'social urbanism' projects can utilize the participation of communities located around each station and vary in scale and effect. By adjusting it's mandate beyond simply providing a public transport service and adopting principles from the paradigm of social urbanism, the ERC and AALRT project can contribute to building " community self-esteem and sense of belonging", but also of 'leverage projects' that "lead to a profound social transformation" (Brand and Davila 2013, p. 52). We must not forget however that there are "many obstacles to achieving these high ends [in] a city which is increasingly socially unequal and spatially segregated, with high levels of poverty, a growing social housing crisis, structural unemployment, alarming levels of informality and underemployment, and restricted opportunities for young people" (ibid, p. 53). Catalan urban planner Oriol Bohigas once spoke of "the creation of sensations of social inclusion and the right to enjoy the city; the exercise of – if not full – at least a decent level of citizenship" (Brand and Davila 2013, p. 53). That is the challenge ahead of the AALRT project and AACA.

Social exclusion vis a vis the right to the city, recognizes "the need for the participation of people in societal governance processes" (Hodgson and Turner 2003, p. 267), in addition to its focus on the distributional aspects of urban governance. This participation can in part be achieved through the implementation of a series of social urbanism projects (as will be highlighted in an example later in this paper) that catch the public's attention and encourage their active involvement. The right to the city approach should further discussions on "enabling people to undertake a range of activities, and thus whether the transport system is currently allowing equal access to such activities for everyone" (ibid, p. 268). We must not forget however, that in cities that are "increasingly socially unequal and spatially segregated, with high levels of poverty, a growing social housing crisis, structural unemployment, alarming levels of informality and underemployment, and restricted opportunities for young people" (Brand and Davila 2013, p. 53), achieving this high ideal, will take generations of careful planning, monitoring and conscious urban governance practices.

By adopting a hybrid approach that; recognizes that some inhabitants will have better access to a new transport system while others will remain excluded; and prioritises the needs of the city's poorest citizens through a series of quality urban interventions, city authorities could set an example for pro-poor infrastructure and urban governance in the region. This interdependent 3-pronged approach (Fig 1.) will require the ERC and it's partners to a) foster community participation in the maintenance and operation of the AALRT; b) develop diverse financing mechanisms to fund urban projects adjacent to the AALRT; and c) ensure equal access to the AALRT by the city's most often marginalized citizens (I.e. Handicapped, elderly, labourers etc).

Based on elements from the aforementioned theoretical concepts, this hybrid approach "should also promote a discussion about allowing all users equal engagement and involvement in decisions about how the transport system serves their needs, how it meets their view of being included (Hodgson and Turner 2003, p. 268).

In the case of Addis Ababa for example, this hybrid approach can potentially be realized through a series of ERC-community meetings to discuss neighbourhood specific accessibility needs and transport services (E.g. Short haul transport links etc). Such initiatives could spark discussions and serve as a level playing ground for active community participation in decisions about how the transport system serves the needs of specific localities. This approach can also encourage partnerships by recommending a series of activities that can be initiated by the ERC (E.g. educational entertainment sessions, recreational vacations, movie presentations, children's theatricals, and tours of the system– which are open to the community) (Metro Medellin, 2014).

This hybrid approach will also require the ERC and other stakeholders to consider extending the public transport service to accommodate specific demographic that is often overlooked in the largely technocratic field of transport planning. Making considerations for the Addis Ababa's poorest, least educated and disadvantaged (often new rural emigrants) citizens will come at a cost and likely require careful planning, but ensuring their 'right to the city' through this transport mode will contribute to equitable city planning practices in Ethiopia and the rest of the continent. That being said, this hybrid approach being proposed is being developed with a set of underlying assumptions.

The Addis Ababa Light Rail Transit Project: Analysis and Observations

Today, Ethiopia, and Addis Ababa specifically plays a significant geo-political role in the region, serving both as the political capital for the continent and as a port and resource corridor from coastal Djibouti to Juba, South Sudan. The greater Addis Ababa region has a population of roughly 4 million and is subdivided into 10 Sub cities and 116 formally independent administrative units called Woredas (See Appendix, Fig 3). Consequently the demand for public transport has spiked and existing minibus and bus systems are having trouble meeting demand. In response to this the federal government partnered with the French rail industry and conducted a series of feasibility studies for Bus Rapid Transit and Light Rail development.

In conjunction with the city's move towards modernity, the Ethiopian Railway Corporation (ERC)[1] has partnered with the China Railway Eryuan Engineering Group (CREEC), and is currently about to complete the first phase of implementing a Light Rail Tram system[2]. Running across the city in four directions, this project will serve as the capital's mass transit backbone, transforming mobility in a city where "nearly 90% of the population travels on foot, or by squeezing in to buses and taxis" (BBC 2013). "The three-section 70% low-floor vehicles will have a maximum speed of 70km/h" (Barrow, 2013) running on three lines: Defence Forces Hospital - Ayat Village (17.3km), Meskel Square - Kality (16.2km) and Lideta - Menilik Square (3.9km) (ERC) (See Appendix, Fig 3).

Thus far this large-scale citywide project has created 3000 jobs in the construction of the ground infrastructure and an additional 150 high skill employment in assembling the tramcars. 800 CREC employees, who are also responsible for training subcontracted local workers that will implement the second and final phase of the project, are overlooking this phase of the project. Contractors have also been conducting training for local staff, and the "Institute of Technology has opened at Addis Ababa University specializing in engineering…sending promising undergraduates to Russia, India and China to continue their education" (Jobson 2014). With urban unemployment as high as 18% (CSA 2012), major infrastructure projects like the AALRT have brought with them hopes of large-scale employment in the localities that they exist.

The first observation present in this analysis addresses the need to ensure patrons of the AALRT consist of those both in the peri-urban interface of the city as well as those living in more deprived areas of the inner city. Well-organized business interests centred around the core of the city often tend to dominate those massive coalitions found in the rest of the city. "Large groups in the population are generally weaker and more incoherent than small groups" (Harvey 1988, p. 78), making it important for communities to mobilize in smaller, well managed groups that can articulate their priorities and negotiate with city authorities on mutual arrangements for joint ticketing/transfers, routes, pricing etc.

There is also potential for the AALRT project to be the centre of a series of urban projects that involve "educational and cultural facilities, environmental upgrading and new public spaces" (Brand and Davila 2013, p. 50). Such 'social urbanism' projects can utilize the participation of communities located around each station and vary in scale and effect. For example, the ERC can partner with the Ethiopian Institute of Architecture, Building and Construction (EIABC) to design and construct public spaces that are unique to the communities surrounding each station. This could serve a double function as community event spaces and potential tourist attractions, with the prospect of generating revenue for the ERC and community groups.

It is also worth noting that well-organized business interests centered around the core of the city can also often tend to dominate those massive coalitions found in the rest of the city. "Large groups in the population are generally weaker and more incoherent than small groups" (Harvey 1988, p. 78), making it important for communities to mobilize in smaller, well managed groups that can articulate their priorities and negotiate with city authorities on mutual arrangements for joint ticketing/transfers, routes, pricing etc. Such community mobilization could be especially effective in more isolated informal pockets of the city. Strong community ties at the neighbourhood association level, can be leveraged in order for ERC to provide a better quality service, and communities be better included in the transport planning process.

Furthermore, projects like the AALRT are also "complex to implement because their integration is always difficult, investments are heavy and the whole process involves so many different actors with sometimes divergent interests, including operators, infrastructure managers, residents, users, communities and institutions, etc" (SSATP, 2014). With a fleet of approximately 15,000, the informal

minibus taxi network is an extensive " demand-driven public transport system that operates without routes maps, timetables or central co-ordination…and in Addis comprises thousands of independent taxi operators serving a multitude of …unofficial bus routes" (Young, 2013) (See Appendix, Fig 6). Given the limited capacity and role that authorities currently have had in the maintenance and management of the public transport sector, "it remains to be seen whether these two vastly different modes of public transport can operate side by side – and how such a transformation is going to be effectively managed and coordinated" (ibid). As such the introduction of a structured mass transit system will very likely require a regulatory body like the Ministry of Transport to coordinate the flow of ridership in the city and manage interactions between the existing informal taxi network and the perspective mass transit mode.

Such a management and coordination body, separate from the ERC could consist of taxi owners association members, the AALRT maintenance contractor, business associations and other community groups to ensure that there are minimal conflicts in the management of the city's public transport sector. Another entity that will also need to be considered in this regard is the Anbessa Bus Service, which is the city's only existing formal public bus service. Anbessa has a current fleet of 500+ high capacity buses and "operations are financially supported by the City administration that pays a subsidy for each passenger carried" (IBIS, 2005). The city has recently purchased additional domestically assembled articulated buses to support it's aged fleet, and will likely be directly competing with the AALRT for passengers (especially those in lower income brackets).

Given the already diverse and complex networks of the existing public transport sector in the city, and the significant modal share of the formal and informal bus networks (See Appendix, Fig 7) authorities comprising such a coordinating body may need to explore the benefits and costs of such a network and "develop appropriate incentive mechanisms to influence the behaviour of its operators. This may require some experimentation to identify the most effective mechanisms, which is an appropriate response when dealing a complex-adaptive system" (Young 2013). Putting together such a joint forum will indeed be a challenge but has been identified as by officials to be essential to the longevity of this mass transit project.

Conclusion

By proposing 'the right to the city' as a guiding principle for the implementation of a public transport system like the AALRT, this paper has examined why the socio- economic impacts of transport infrastructure projects in the Global South often overlooked in light of increased technical innovation and progress; and proposes a hybrid planning paradigm that identifies and prioritises the needs of the most underprivileged users. This analysis has resulted in a context-applicable approach in order "to engage with the cumulative effects of informalised economies, settlements, social-cultural systems and political cultures" (Pieterse, 2011) that are present in many African cities.

Improving equity amongst the citizens of any city is no easy task, and can take generations to achieve. However, by taking the necessary steps to ensure that all citizens' right to the city is respected and that access to services is not determined by socio-economic status, actions in the public transport sector can indeed have a profound effect on bridging the gap between the urban poor and rich. As such, "all measures described above are conducive to an improved transportation system, which in turn will enhance the city's equity, harmony if taking people as the centre of the new transport paradigm" (GIZ 2010, p. 59). By putting people at the core of transport planning processes, city authorities can avert potential costs in maintenance and operations. As users are made aware of appropriate civic behaviour, a collective consciousness will develop therefore making public transport not just a means of mobility, but rather a comfortable, convenient and pleasurable urban transport experience.

Major stakeholders in the public transport sector like ERC and the AACA now have the opportunity to show "that urban planning and transport need to go together so the growth of cities will be better controlled" (Obiero, 2013). If the city's rail transport planners act soon enough to ensure that infrastructure projects like the AALRT are inclusive and participatory, they can set an example, and more importantly a standard for other African cities to follow, avoiding inter alia, " the problems of pollution and congestion found in mega-cities in Latin America and Asia" (ibid).

The completion of the AALRT project "will mean a dramatic shift towards a centralized model of public transport for the city" (Young, 2013), and with the committed leadership that already exists in the ERC and the potential social and economic impact of the AALRT project, Addis Ababa's public transport sector has the opportunity to educate, foster positive lifestyles and civic behaviour and become "a model for state-owned social and commercial enterprises, both in administrative management and social responsibility" (Metro De Medellin, 2014) in Sub-Saharan Africa.

While this analysis has aimed to provide a comprehensive exploration of possible approaches to inclusive transport planning in rapidly growing cities of the Global South, it is worth acknowledging that information gaps do exist in this analysis, and the author is fully aware that these gaps will have consequences for the line of argument presented and the conclusions reached in this paper. However given the theoretical focus of the dissertation, and the rigorous amount of desk research and secondary sources reviewed, this document serves as an exploration of the potential social impacts that large transport infrastructure projects can have on some of the most underprivileged communities in urban Ethiopia.

Moreover, this paper has tried to show that the major transport infrastructure projects like the AALRT do indeed have an important role to play in "determining social outcomes for different sectors of modern society, in terms of both the absence of adequate transport services and the impact of the transport system on individuals and communities" (Lucas 2010, p. 5). As such, this analysis intends to serve as a catalyst for ensuring that such infrastructure projects simultaneously make efforts towards addressing some of the often-neglected issues of social exclusion and accessibility, in transport planning processes of cities in the Global South.

References

Addis Ababa City Planning Project Office (AACPPO) (2012). Transportation challenges in a booming city: Coordination of the mass transit network and urban development in Addis Ababa. *Background to CODATU XV 22 - 26 October 2012 The role of urban mobility in (re)shaping cities.* Agence France de Development.

Barrow K., (2013). 'CNR to supply trams for Addis Ababa LRT' *International Railway Journal.*March17,2014. available at: http://www.railjournal.com/index.php/africa/cnr-to-supply-trams-for-addis-ababa- lrt.html. Accessed: August 2014

Brand P. and Davila, J. (2011). Mobility innovation at the urban margins: Medellín's Metrocables. Published in *City Journal. Available at: http://www.bartlett.ucl.ac.uk/dpu/metrocables/dissemination. Accessed: July 2014*

Brand P. and Davila, J. (2013). Metrocables and 'Social Urbanism': Two Complementary Strategies. In Dávila, J. (ed.), Urban Mobility and Poverty (p. 46-54). Lessons from Medellín and Soacha, Colombia, DPU-UCL and Universidad Nacional de Colombia,

Ethiopian Railway Corporation (ERC) (2012). Addis Ababa Light Rail Transit Project. *Presentation by Mr.* Yehualaeshet Jemere (MSc. CEng) Chief Officer, Construction and Project Execution Department, ERC. July 2012.

GIZ (2010). Challenges of urban transport in developing countries. *GIZ Sourcebook on Sustainable Urban Transport for Policymakers in Developing Cities. GIZ- Sustainable Urban Trnasport Programme (SUTP). October 2010.* Available at: www.sutp.org. Accessed: April 2014.

Harvey, D. (1988) Social Justice and the City, Blackwell Publishers, pp. 96-118. Harvey, D. (2008) 'The right to the city'. New Left Review,

53(September/October):

Hodgson, F. C. & Turner, J., 2003. "Participation not consumption: the need for new participatory practices to address transport and social exclusion," Transport Policy, Elsevier, vol. 10(4), pages 265-272, October.

IBIS Transport Consultants (2005). Study of urban public transport conditions in Addis Ababa, Ethiopia. March 2005. *Public Private Infrastructure Advisory Facility. Available at:* www.ppiaf.org/sites/ppiaf.org/files/.../UrbanBusToolkit/.../Addis.doc. Accessed: July 2014

Jobson, E. (2014). 'Transport: Riding the rails in Ethiopia and Kenya' *The Africa Report.* 25 March, 2014. Available at: http://www.theafricareport.com/East-Horn- Africa/transport-riding-the-rails-in-ethiopia-and-kenya.html. Accessed: August 2014

Kable Intelligence Ltd, Railway Technology, (2014. *Light Rail Developments, Algeria.* Available at:

Lucas, K. (2010) 'The role of transport in the social exclusion of low-income populations in South Africa: a scoping study', *Proceeding of Transportation Research Board Annual Meeting* 10–15 January, Washington DC.

Lucas, K., Tyler, S. and Christodoulou, G. (2008) *The Value of New Transport in Deprived Areas: Who benefits, how and why?* Joseph Rowntree Foundation http://www.jrf.org.uk/sites/files/jrf/2228-transport-regeneration-deprivation.pdf.

Ministry of Works and Urban Development (MWUD) (2006). Urban Transport Planning Manual. *Mathewwos Consult:* Architectural, Engineering, Urban Planning, Urban Development and Urban Management Consultants.

Metro De Meddellin, (2014). *Cultura Metro.* Available at: https://www.metrodemedellin.gov.co/index.php?option=com_content&view=article&id=75&Itemid=113&lang=en. Accessed: August 2014

Mulligan, C. The case for light rail; London, (2003) Jun, 0, 09:40 -- Waterfront Conference Company; 2003 – 2003

Obiero, M. Mbanga J. and Redvers, L. (2013). 'Transport: Can African Trains Take theStrain?' *TheAfricaReport.*26July2013.Availableat: http://www.theafricareport.com/East-Horn-Africa/transport-can-african-trains-take- the-strain.html Accessed: June 2014

Pieterse, E. (2011). Rethinking African Urbanism from the Slum. LSE Cities Article Series.November2011.Available at: http://lsecities.net/media/objects/articles/rethinking-african-urbanism-from-the- slum/en-gb/. Accessed: August 2014

Preston, J and Rajé, F, 2006, "Accessibility, mobility and transport-related social exclusion", Journal of Transport Geography, Vol. 15, No. 3, pp. 151-160.

Railway Gazette, (2013). 'Addis Abeba light rail civil works to be completed this year' Available 4 October,2013.Available at: http://www.railwaygazette.com/news/news/africa/single-view/view/addis-abeba-

light-rail-civil-works-to-be-completed-this-year.html Accessed: August 2014.

Serebrisky, T., Gomez-Lobo, A., Estupiñán N., Munoz-Raskin R., (2009), Affordability and subsidies in public urban transport: what do we mean, What Can Be Done?, in Transport Reviews, Vol. 29 (6), pp 715–739.

Tolon, U.W. (2008). Comparison of Urban Upgrading Projects on Development Cooperation in Ethiopia. November 2008. World Bank. *UPC Commons.* Available at: https://upcommons.upc.edu/pfc/bitstream/2099.1/6374/8/07.pdf. Accessed: July 2014.

Tyler, N. (Ed.), (2002), Accessibility and the bus system: from concepts to practice, London: Thomas Telford.

Ujorha T, (2012). 'Lagos: China and the Light Rail Project' *TradeMark Southern Africa.* January 17, 2012. Available at: http://www.trademarksa.org/news/lagos- china-and-light-rail-project. Accessed: June 2014.

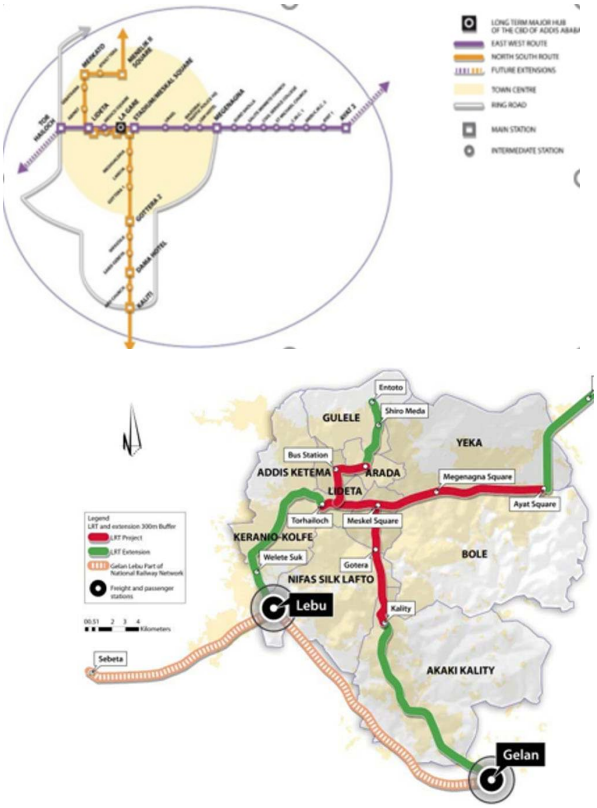
UN HABITAT (2008). Addis Ababa Urban Profile. *Participatory Slum Upgrading Programme in the African, Caribbean and Pacific Countries.* UNON, Publishing Services Section, Nairobi, ISO 14001:2004-certified.

World Bank, Sub-Sahara African Transport Policy Programme (SSATP), (2014). Available at: www.ssatp.org. Accessed: August 2014.

Xueming (Jimmy) Chen (2013) A Review of "Urban Transport in the Developing World: A Handbook of Policy and Practice", Journal of the American Planning Association,79:2,179.Availableat: http://dx.doi.org/10.1080/01944363.2013.772480. Accessed: May 2014.

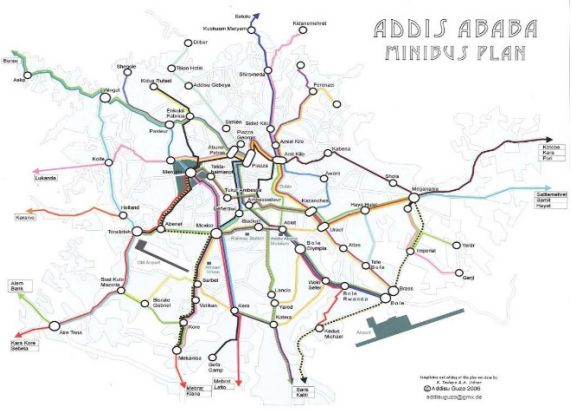
Young, A, (2013). 'Cities in motion: Addis Ababa already has a great network minibus taxis' *The Guardian Online.* 19 February 2014. Available at: http://www.theguardian.com/cities/2014/feb/19/cities-in-motion-addis-ababa- minibus-taxi . Accessed: June 2014.

Appendix



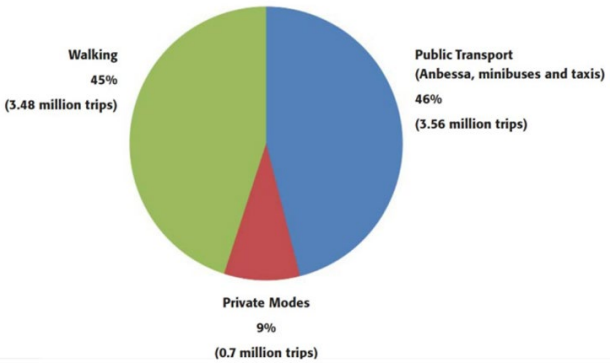
Source: ERC 2012.

Fig. 3 AALRT Planned Routes, Stations and Phased extensions by Woreda "Administrative Units"



Source: Addisu Guzo, 2006.

Fig 6. Addis Ababa Existing and lanned Minibus Routes



Source: Ministry of Transport, 2006

Fig 7. Addis Ababa Modal Share for Public Transport

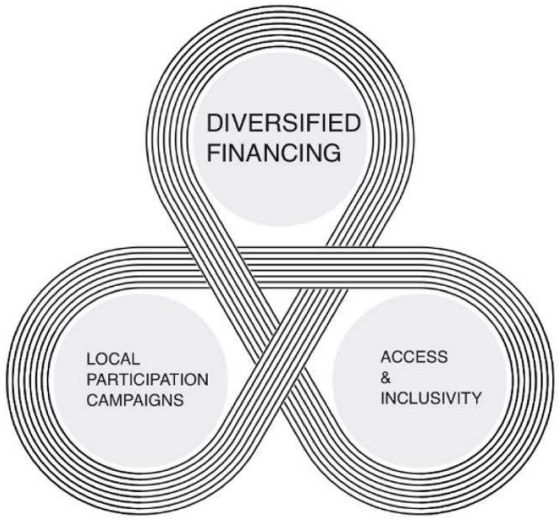


Fig 1. Hybrid Approach to Inclusive Planning